

## CLAIMS

1. A method of analyzing a sample for the presence of one or more analytes, comprising:

contacting said sample with a plurality of microspheres, each of the plurality of microspheres comprising a solid support having an exterior surface, a color-based address comprising one or more dyes contained within the solid support and adapted to identify an individual microsphere, and a ligand attached to the exterior surface which binds one of said analytes;

detecting a level of fluorescence associated with each of the plurality of microspheres;

determining the color-based address of each of the plurality of microspheres; and

correlating the level of fluorescence of each of the plurality of microspheres with the color-based address for each of the plurality of microspheres.

2. The method according to claim 1, further comprising labeling at least one of said analytes with a fluorescent tag.

3. The method according to claim 1, further comprising outputting information based on the correlating the level of fluorescence.

4. The method according to claim 3, further comprising retrieving the identification of the ligand present on each of the plurality of microspheres from a look-up table.

5. The method according to claim 3, further comprising retrieving the identification of the analyte able to bind the ligand present on each of the plurality of microspheres from a look-up table.

6. The method according to claim 1, wherein the determining of the color-based address of each of the plurality of microspheres comprises determining an absorption spectra of light that has encountered the microsphere.

7. The method according to claim 6, wherein the light comprises white light.

8. The method according to claim 1, wherein the determining the color-based address of each of the plurality of microspheres comprises determining an absorption level at a peak absorbance for each of the one or more dyes.

9. The method according to claim 1, further comprising directing each of the plurality of microspheres into a chamber selected from a plurality of chambers;  
wherein the directing is based upon the determining the color-based address of the microsphere.

10. The method according to claim 9, wherein the directing comprises selectively bombarding the microsphere with a stream of fluid.

11. The method according to claim 9, wherein the directing comprises selectively activating a wall member adapted to direct the microsphere toward the chamber upon activation.

12. The method according to claim 9, wherein each microsphere further comprises a magnetic locus, and wherein the directing comprises selectively activating one or more electromagnets adapted to direct the microsphere toward the chamber upon activation.

13. A method of sorting one or more analytes from a sample containing a plurality of analytes, comprising:

contacting said sample with a plurality of microspheres, each of the plurality of microspheres comprising a solid support having an exterior surface, a color-based address adapted to identify an individual microsphere, and a ligand attached to the exterior surface which binds one of said analytes;

determining the color-based address of each of the plurality of microspheres; and

directing each of the plurality of microsphere into a chamber selected from a plurality of chambers;

wherein the directing is based upon the determining the color-based address of the microsphere.

14. The method according to claim 13, wherein the directing comprises selectively bombarding the microsphere with a stream of fluid.

15. The method according to claim 13, wherein the directing comprises selectively activating a wall member adapted to direct the microsphere toward the chamber upon activation.

16. The method according to claim 13, wherein each microsphere further comprises a magnetic locus, and wherein the directing comprises selectively activating one or more electromagnets adapted to direct the microsphere toward the chamber upon activation.

17. The method according to claim 13, wherein the determining of the color-based address of each of the plurality of microspheres comprises determining an absorption spectra of light that has encountered the microsphere.

18. The method according to claim 13, wherein the color-based address of each of the plurality of microspheres comprises one or more dyes within the solid support of the microsphere; and

wherein the determining the color-based address of each of the plurality of microspheres comprises determining an absorption level at a peak absorbance for each of the one or more dyes.

19. A method of analyzing a sample for the presence of one or more analytes, comprising:

contacting said sample with a plurality of microspheres, each of the plurality of microspheres comprising a solid support having an exterior surface, a color-based address comprising one or more dyes contained within the solid support and adapted to identify an individual microsphere, and a ligand attached to the exterior surface which binds one of said analytes;

detecting a level of fluorescence associated with one of the plurality of microspheres;

determining an absorption spectra of light that has encountered the one of the plurality of microspheres;

repeating the detecting a level of fluorescence and determining an absorption spectra for each of the plurality of microspheres; and

correlating the level of fluorescence for each of the plurality of microspheres with the absorption spectra for each of the plurality of microspheres.

20. The method according to claim 19, further comprising directing each of the plurality of microspheres into a chamber selected from a plurality of chambers;

wherein the directing is based upon the absorption spectra determined for light that has encountered the microsphere.